

AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A disk drive device for recording and/or reproducing information to and/or from an information recording disk and driven by a power supply voltage in a vehicle, said disk drive device comprising an engine start detecting part for detecting an engine start of the vehicle, said disk drive device being driven only after said engine start detecting part detects an engine start of said vehicle.

2. (Currently amended) A disk drive device for recording and/or reproducing information to and/or from an information recording disk and driven by a power supply voltage in a vehicle, said disk drive device comprising:

a head for reading and/or writing information from and/or to the information recording disk;

a head driving part for giving driving instructions to said head;

an engine start detecting part for detecting an engine start of said vehicle; and

a head movement allowing part for allowing said head to be moved by instructions from said head driving part only after the engine start of the vehicle is detected by said engine start detecting part.

3. (Previously presented) The disk drive device according to claim 2, further comprising a forcible moving part for forcibly moving said head to a retreat position when the power supply voltage to said disk drive device is interrupted.

4. (Previously presented) The disk drive device according to claim 3, further comprising a spindle motor for rotating the recording disk, wherein:

said forcible moving part forcibly moves said head to the retreat position by providing said head driving part with counter electromotive force generated by inertial rotation of said spindle motor.

5. (Previously presented) The disk drive device according to claim 1, further comprising a voltage value monitoring circuit for monitoring voltage values on a first power supply line provided with backup power and a second power supply line provided with power when an engine key is inserted in the vehicle and turned from a first position to a second position,

said engine start detecting part outputting an engine start detection signal when the monitored voltage value on said second power supply line reaches a prescribed value, following which the monitored voltage value on the first power supply line or the monitored voltage values on the first power supply line and on the second power supply line become lower than said prescribed value and then become higher than said prescribed value, based on an output value from said voltage value monitoring circuit.

6. (Previously presented) The disk drive device according to claim 5, wherein:

said voltage value monitoring circuit monitors a voltage value on a third power supply line provided with power when the engine key is turned from the second position to a third position, and monitors a voltage value on a fourth power supply line provided with power when the engine key is turned from the third position to a fourth position, and

Serial No. 09/839,538
Docket No.: PU01-0167

said engine start detecting part outputs an engine start detection signal when the monitored voltage value on the second power supply line or the third power supply line reaches a prescribed value, following which the monitored voltage value on the first power supply line or the monitored voltage values on the first power supply line and on the second power supply line become lower than the prescribed value and then become higher than said the prescribed value, based on an output from said voltage value monitoring circuit.

7. (Previously presented) The disk drive device according to claim 1, wherein said engine start detecting part detects the engine start by sensing an output of an engine tachometer.

8. (Previously presented) The disk drive device according to claim 1, wherein said engine start detecting part detects the engine start by sensing vibration of the engine inside and outside the vehicle.

9. (Previously presented) The disk drive device according to claim 1, wherein said engine start detecting part detects the engine start by sensing an engine sound.

10. (Previously presented) The disk drive device according to claim 1, wherein said engine start detecting part detects the engine start by sensing traveling of the vehicle based on a vehicle speed pulse.

Serial No. 09/839,538
Docket No.: PU01-0167

11. (Previously presented) The disk drive device according to claim 1, wherein said engine start detecting part detects the engine start by sensing traveling of the vehicle using a gyro sensor.
12. (Previously presented) The disk drive device according to claim 1, wherein said engine start detecting part detects the engine start by sensing an operation position of a parking brake.
13. (Previously presented) The disk drive device according to claim 1, wherein said engine start detecting part detects the engine start by sensing operation of a generator in the vehicle.
14. (Previously presented) The disk drive device according to claim 1, wherein said engine start detecting part detects the engine start by sensing activation of a starter-motor.
15. (Previously presented) The disk drive device according to claim 1, further comprising a memory, wherein information from a previous off state of the engine is backed up in a-said memory, and the backed-up information is provided for display on a screen in response to detection of power being provided to the second power supply line.
16. (Previously presented) A disk drive device driven by a power supply voltage in a vehicle, said disk drive device comprising:

a counter for starting a counting operation based on a prescribed signal related to a key switch in the vehicle; and

a controller for driving said disk drive device when said counter has counted a first prescribed time period.

17. (Currently amended) A disk drive device driven by a power supply voltage in a vehicle, said disk drive device comprising:

a head for reading/writing information from/to a recording medium mounted to said disk drive device;

a head driving part for giving a driving instruction to said head;

a counter for starting a counting operation based on a prescribed signal related to a key switch in the vehicle; and

a head movement allowing part for allowing said head to be moved by the given driving instruction from said head driving part when said counter has counted a first prescribed time period.

18. (Currently amended) The disk drive device according to claim 16, further comprising a power supply part for providing a power supply voltage to each part of said disk drive device in connection with the key switch in the vehicle, wherein:

said counter starts the counting operation after the power supply voltage from the power supply part is provided to said disk drive device by the key switch.

19. (Currently amended) The disk drive device according to claim 18, further comprising a voltage value monitoring circuit for monitoring a voltage value at said power supply part; wherein part, wherein:

said controller detects a voltage value result at said voltage value monitoring circuit after the first prescribed time period, controls said counter to count a second prescribed time period when the voltage value is lower than a prescribed value when the voltage value result is detected, and drives said disk drive device when said counter has counted the second prescribed time period.

20. (Previously presented) The disk drive device according to claim 18, further comprising a forcible moving part for forcibly moving said head to a retreat position when the power supply voltage to said disk drive device is interrupted.

21. (Previously presented) The disk drive device according to claim 20, further comprising a spindle motor for rotating the recording medium, wherein:

said forcible moving part forcibly moves said head to the retreat position by providing said head driving part with counter electromotive force generated by inertial rotation of the spindle motor.

22. (Previously presented) The disk drive device according to claim 16, further comprising an engine start detecting part for detecting an engine start of the vehicle, wherein:

Serial No. 09/839,538
Docket No.: PU01-0167

said disk drive device is driven when an engine start of the vehicle is detected by said engine start detecting part during the operation of said counter counting the first prescribed time period.

23. (Previously presented) The disk drive device according to claim 1, further comprising:

a counter for starting a counting operation based on a prescribed signal related to a key switch in the vehicle; and

a controller for driving said disk drive device when said counter has counted a first prescribed time period.

24. (Currently amended) A disk drive device for recording and/or reproducing information to and/or from an information recording disk and driven by a power supply voltage in a vehicle, said disk drive device comprising a sensor for detecting a vehicle condition indicative of an engine start of the vehicle, said disk drive device being driven only after said sensor detects the condition to indicate an engine start of the vehicle.

25. (New) A disk drive device driven by a power supply voltage in a vehicle, said disk drive device comprising:

a power supply part for providing a power supply voltage to said disk drive device in response to operation of a key switch in the vehicle;

Serial No. 09/839,538
Docket No.: PU01-0167

a counter for starting a counting operation to count a first prescribed time period after the power supply voltage from the power supply part is provided to said disk drive device;

a voltage value monitoring circuit for monitoring a voltage value at said power supply part; and

a controller responsive detection of a voltage value result by said voltage value monitoring circuit after said counter has counted the first prescribed time period, for controlling said counter to count a second prescribed time period when the voltage value is lower than a prescribed value, and for driving said disk drive device when said counter has counted the second prescribed time period.